

Global Scaling Up Handwashing Project

Behavioral Determinants of Handwashing with Soap Among Mothers and Caretakers: Emergent Learning from Senegal and Peru

February 2012

INTRODUCTION

The Water and Sanitation Program (WSP) has supported the Global Scaling Up Handwashing Project in Peru, Senegal, Tanzania, and Vietnam. The project has tested whether innovative promotional approaches to behavior change can generate widespread and sustained improvements in household hygiene practices. The implementation phase of the project ended in June 2011.

The project has a significant learning objective, an important component of which is to ascertain the key factors that influence behavior change. These are known as *behavioral determinants*. Studies such as a formative research study conducted in Kenya in 2007¹ have found that while knowledge around handwashing tends to be high, practice rates are low. This finding is illustrative of

the knowledge-behavior gap² encountered by anti-smoking and condom-use initiatives, among others, and reflects the complexity of human behavior.

Recognizing this, the project developed the FOAM framework, in which “FOAM” refers to Focus, Opportunity, Ability, and Motivation³ to help analyze and understand handwashing behavior (see Figure 1). More specifically, FOAM was developed to inform the design of formative research, interventions as well as monitoring to increase the effectiveness of its behavior change program.

A key feature of the project is its monitoring and evaluation component, which includes randomized control baseline and endline studies, longitudinal surveys, periodic implementation surveys, and a comprehensive management

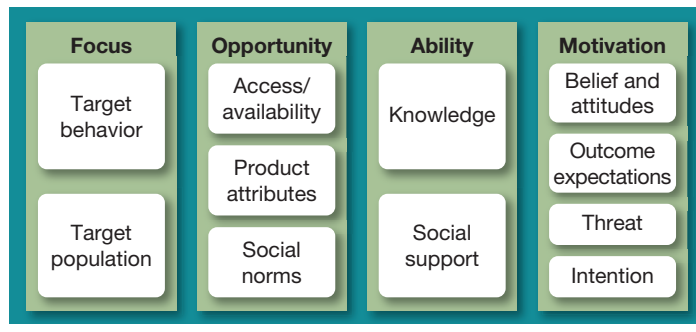
Key findings

- Handwashing with soap was correlated with two behavioral determinants—beliefs and access to soap and water—in both Peru and Senegal for proxy measures used.
- Different behavioral determinants have a greater or lesser effect on handwashing with soap depending on the proxy measure used to measure the behavior.
- Program managers must clearly define the exact behavior (times and junctures) they wish to improve to inform what determinant their formative research should explore.

¹ Steadman Group. 2007. *Formative and Baseline Research on Handwashing with Soap*. Final Report prepared for WSP/World Bank.

² The “knowledge-behavior gap” refers to findings from many studies and programs that people may know what to do to improve their health or other living conditions but for various reasons may not act on that knowledge.

³ See Y. Coombes and J. Devine, *Introducing FOAM: A Framework to Analyze Handwashing Behaviors*, available at www.wsp.org/wsp/sites/wsp.org/files/publications/WSP_IntroducingFOAM_HWWS.pdf.

Figure 1: FOAM Framework

information system (MIS) that enabled continuous monitoring and improvement. These components have been used to measure and track key indicators such as diarrhea incidence. This Learning Note aims to highlight key findings from two studies, the impact evaluation baseline study conducted in Peru in 2007⁴ and a “doer/non-doer” study conducted in Senegal in 2010.

PROBLEM STATEMENT

Baseline data collected in Peru and Senegal suggested that handwashing with soap rates were rather low, based on several proxy measures⁵ (see Table 1). The project needed to identify which behavioral determinants to prioritize to

maximize the effectiveness of interventions targeting mothers and caretakers.⁶

ACTION

To identify the behavioral determinants of handwashing with soap among mothers and caretakers, the project applied *segmentation analysis*, a methodology developed by Population Services International (PSI) to identify determinants associated with other behaviors such as condom use or the adoption of other contraceptive methods.⁷ The objective of segmentation analysis is to compare those who perform the behavior with those who do not (and identify the behavioral determinants that distinguish them and are statistically significant).

The project followed these steps:

- Developed a series of statements that aimed to tap into the underlying constructs of a determinant (such as beliefs around the importance of soap when washing hands).
- Administered the statements to mothers and caretakers as part of a quantitative survey. Respondents were asked to give their level of agreement or disagreement to each statement⁸ using a Likert scale (generally of 1 to 4).

Table 1: Observed Handwashing Stations (Percentage of Households)

Observed Handwashing Station	Peru (n=3,576)	Senegal* (n=1,550)
. . . with soap and water	64.4%	32.3%
. . . inside toilet or kitchen facility	33.1%	8.2%
. . . in yard within 3 meters of toilet or kitchen facility	19.0%	14.5%
. . . in yard within 3 to 10 meters of toilet or kitchen facility	21.0%	6.8%
. . . in yard more than 10 meters from toilet or kitchen facility	19.1%	2.8%

Source: Data adapted from WSP's IE baseline reports conducted in Peru and Senegal.

*The Senegal data are based on values collected for the Impact Evaluation (IE) baseline survey conducted in Senegal and are presented in this table for comparison purposes only. Senegal data analyzed elsewhere in this Learning Note were collected for the “doer/non-doer” study.

⁴ Analysis of this particular data set was conducted by Katherine Delisio and documented in her MPH thesis at George Washington University, *Behavioral Determinants of Handwashing among Peruvian Caregivers: Analysis of Baseline Data from the Water and Sanitation Program (WSP)'s Scaling Up Handwashing Behavior Change Initiative*. Also see S. Galiani and A. Orsola-Vidal, *Scaling Up Handwashing Behavior: Findings from the Impact Evaluation Baseline Survey in Peru*, available at www.wsp.org/wsp/sites/wsp.org/files/publications/WSP_PeruBaselineStudy_HWWWS.pdf; and A. Orsola-Vidal and A. Yusuf, *Scaling Up Handwashing Behavior: Findings from the Impact Evaluation Baseline Survey in Senegal*, available at <http://www.wsp.org/wsp/sites/wsp.org/files/publications/WSP-Senegal-Baseline-HWWWS.pdf>.

⁵ For more background and information on proxy measures for handwashing with soap, see P. Ram, *Practical Guidance for Measuring Handwashing Behavior*, available at www.wsp.org/wsp/sites/wsp.org/files/publications/PracticalGuidance_HWWWS.pdf.

⁶ For more details on how the determinants were prioritized and applied within the interventions, see J. Devine and R. Flórez Peschiera, *Peru: A Handwashing Behavior Change Journey*, available at www.wsp.org/wsp/sites/wsp.org/files/publications/WSP_PeruBehaviorChange_HWWWS.pdf; and J. Devine and S. Koita, *Senegal: A Handwashing Behavior Change Journey*, available at www.wsp.org/wsp/sites/wsp.org/files/publications/WSP_SenegalBCJourney_HWWWS.pdf.

⁷ Population Services International, *Dashboard Analysis Series Three: Segmentation Analysis*, available at www.psi.org/sites/default/files/publication_files/Dashboard-TRaC3-Toolkit.pdf.

⁸ Knowledge, on the other hand, was not measured through a Likert scale. Although multiple responses are possible, they are recoded as a binomial variable depending on whether the respondent gave a correct answer or not.

- Developed constructs for behavioral determinants, which were then evaluated using multivariate analysis.⁹
- Developed segmentation tables comparing those who wash hands with soap and those who do not, based on certain proxy measures. Factors statistically associated with the behavior were deemed to be determinants that predict the behavior.

KEY FINDINGS

Analysis of the baseline study from Peru and the “doer/non-doer” study from Senegal established an interesting set of findings regarding the relationship between the behavioral determinants of handwashing with soap and the various proxy measures used (see Table 2). The approach and statistical tests used point to correlation but do not say anything about causality (this is discussed in greater detail in the last section).

Key findings include:

- Handwashing with soap was correlated with two behavioral determinants—beliefs and access to soap and water—in both Peru and Senegal for the proxy measures used.
- Different behavioral determinants have a greater or lesser effect on handwashing with soap depending on the proxy

measure used to measure the behavior. Program managers must therefore clearly define the exact behavior (times and junctures) they wish to improve to inform what determinant their formative research should explore.

The following section will address the specific items that were used to generate the access and beliefs scales, as well as additional behavioral determinants that were tested in the studies.

Beliefs

Although defined differently in each country, beliefs about soap and the practice of handwashing were significantly correlated with handwashing with soap in Peru and Senegal.

In Peru, beliefs were measured through a set of statements which, taken together, form a reliable scale:¹⁰

- *If you wash your hands well with water, you don't need to use soap.*
- *You only need to wash your hands with soap if they look or smell bad.*
- *Washing your hands with soap before feeding a child is important only if you use your hands to feed them.*

Table 2: Handwashing with Soap Proxy Measures Discussed in this Learning Note

Study	Presence of a Handwashing Station	Presence of Soap and Water	Distance from Latrine Facility*	Distance from Cooking Facility**
Peru Impact Evaluation Baseline	Suitable (designated location) station with soap and water present	Soap included multipurpose bar soap, beauty/toilet bar soap, or laundry powder	Distance must be accessible (within 10 feet or 3 meters of facility)	Distance must be accessible (within 10 feet or 3 meters of facility)
Senegal “Doer/Non-Doer”	Suitable (designated location) station with soap and water present	Water must be within a “measurable” distance from the latrine; no specific soaps defined	No measurable distance specified, but there must be a specified toilet facility to be considered a handwasher	No measurable distance specified

* Used to define the presence of a station at or near latrine facility.
** Used to define the presence of a station at or near kitchen facility.

⁹ For more details on the methodology used, please see O. Hernandez et al., *Measuring Behavioral Determinants of Handwashing with Soap*, available at www.wsp.org/scalinguphandwashing.
¹⁰ In this case, a scale is considered reliable if two conditions are satisfied: a factor with at least three items is generated through factor analysis with an eigenvalue greater than one (which measures the amount of variance each factor accounts for) and a strong internal consistency, captured by an alpha coefficient greater or equal to 0.70. (For more information, see A.N. Oppenheim, *Questionnaire Design, Interviewing, and Attitude Measurement*, Pinter and Kline, 1992; and P. Kline, *An Easy Guide to Factor Analysis*, Routledge, 1994.) The Cronbach’s alpha calculated for the beliefs scale in Peru was 0.78.

BOX 1: INTERPRETING ODDS RATIOS IN A LOGISTIC REGRESSION

An odds ratio (OR) is interpreted as the likelihood, or relative probability, of an outcome (in this case, handwashing with soap) for one group versus another. In the examples presented here, the OR compares groups according to an ordinal score on behavioral determinants scales rather than groups according to exposure to a treatment or condition. As such, for each one unit increase on the scale the analysis estimates the likelihood of the outcome, handwashing with soap. An OR equal to 1 means that no matter where someone scores on the scale, they have an equal odds of washing hands with soap. An OR greater than 1 means that as the score increases, the odds of washing hands with soap increase. Conversely, an OR less than 1 means that as the score increases, the odds of washing hands with soap decrease.

- *Washing hands uses up water in a household that could be better used for other purposes.*
- *You don't need to wash your hands with soap if you know you have not touched anything dirty.*
- *If you wash your hands many times with water you do not need to use soap.*

In Senegal, similar beliefs were also probed;¹¹ in addition, some traditional/cultural myths were explored. Overall, the scale for beliefs included the following statements:¹²

- *You do not need to wash your hands if you use a spoon or fork to eat.*
- *Because foods are well-cooked there is no point in washing your hands with soap before handling them.*
- *There is no need to wash your hands with soap before feeding a child with a spoon or fork.*
- *Using soap prior to praying makes you impure.*

- *Using soap when washing hands removes protection provided by good luck charms (talismans).*
- *Soap should not be used when washing hands prior to going to the sacred woods.*
- *If water alone is good enough to make you pure for praying, then water alone is surely enough to clean hands before eating.*

Table 3 presents the results for the beliefs scales from the logistic regressions performed for each study. The results show that beliefs were correlated with handwashing with soap in Peru at a significance level of 0.05, regardless of what proxy measure is used. Furthermore, mother and caretakers who scored higher on the beliefs scale were more likely to have a designated location for washing hands with soap (OR=1.65 to OR=2.14, depending on the proxy measure used for handwashing with soap).¹³

In Senegal, beliefs were significantly correlated (at a significance level of 0.05) with the presence of a handwashing station with soap and water at or near a kitchen facility and the presence of a handwashing station with soap and water at or near both facilities. Evidence suggests that mothers and caretakers who scored higher on the beliefs scale were more likely to have a place to wash their hands with soap (OR=1.43 to OR=1.77, depending on the location of the handwashing station).

Access

Although soap (of any type) for washing hands was observed in 97 and 59 percent of households in Peru and Senegal, respectively,¹⁴ it has been the hypothesis of the project that this is not sufficient. For handwashing with soap to take place, it has been assumed that water and soap must be readily and conveniently accessible when needed. This proposition is supported by several studies, including one conducted among rural Bangladesh households, which concluded that interventions that improve the presence of water and soap at the designated place for handwashing could improve handwashing

¹¹ The Cronbach's alpha calculated for the beliefs scale in Senegal was 0.73, suggesting a reliable and internally consistent scale.

¹² These are rough translations from the surveys, which were written in French and Wolof.

¹³ K. Delisio, *Behavioral Determinants of Handwashing among Peruvian Caregivers: Analysis of Baseline Data from the Water and Sanitation Program (WSP)'s Scaling Up Handwashing Behavior Change Initiative*.

¹⁴ See S. Galiani and A. Orsola-Vidal, *Scaling Up Handwashing Behavior: Findings from the Impact Evaluation Baseline Survey in Peru*, available at www.wsp.org/wsp/sites/wsp.org/files/publications/WSP_PeruBaselineStudy_HWWS.pdf; and C. Chase and Q.-T. Do, *Scaling Up Handwashing Behavior: Findings from the Impact Evaluation Baseline Survey in Vietnam*, available at www.wsp.org/wsp/sites/wsp.org/files/publications/WSP-VietnamBaselineReport_HWWS.pdf.

Table 3: Logistic Regression Results for Beliefs Scale Using Proxy Measures of Handwashing with Soap^{a,b}

Country	Measure	Place to Wash Hands with Soap and Water Near Sanitation Facility	Place to Wash Hands with Soap and Water Near Kitchen	Place to Wash Hands with Soap and Water Near Sanitation Facility OR Kitchen	Place to Wash Hands with Soap and Water Near Sanitation Facility AND Kitchen ^c
Peru (n=3,411)	Percentage of handwashers	29.0%	43.4%	50.1%	22.3%
	Beliefs scale	2.14 ^d	1.65 ^d	1.94 ^d	1.96 ^d
	Significance (p-value)	<0.001	<0.001	<0.001	<0.001
Senegal (n=1,770)	Percentage of handwashers	7.2%	31.4%	33.1%	5.4%
	Beliefs scale	1.43	1.74 ^d	1.68 ^d	1.77 ^d
	Significance (p-value)	0.068	<0.001	<0.001	0.018

^aLogistic regression results report the odds ratios (OR) indicating the likelihood of outcome/behavior for each unit increase in the beliefs score.

^bRegressions control for caregiver education and household wealth measured using an assets index (Peru).

^cIt is important to clarify that this category refers to households that have handwashing stations that would be considered adequate for both sanitation facilities, whether this is one handwashing station or two. This is different from the preceding category, which accounts for households that have a designated station for at least one of the two facilities. This second category makes the pool of potential handwashers larger.

^dRepresents significance at the 5 percent level.

behavior.¹⁵ In addition to physical access, the access scales in Peru and Senegal implicitly included a more gender-related dimension, captured by statements making reference to the need to ask others for permission to buy soap.

To test this hypothesis, a reliable scale for access in Peru was constructed from the following statements:

- *You know of a place where you can buy soap.*
- *There is always enough water to wash your hands when you need to.*
- *You can buy soap when you decide to do it without asking someone else.*
- *Soap and water are always available in your house to wash hands after going to the toilet.*
- *You can always find soap when you need it.*
- *Soap and water are always available in your house to wash hands before eating.*
- *Sometimes you want to wash your hands but soap and water are just not there when you need them.*

In Senegal, access was measured through a scale based on a similar series of statements. The scale was composed of the following items:

- *Whenever you need to buy soap, you can find it at a nearby store.*
- *You have a designated place in your house for handwashing.*
- *You always have enough water for handwashing.*
- *You can buy soap without having to ask someone.*
- *The price you pay for soap is within reach.*
- *Soap and water are always available for handwashing with soap when you come out of the toilet.*
- *You can always find soap at home when you need it.*
- *Soap and water are always available for handwashing with soap before eating.*
- *Sometimes you want to wash your hands but soap and water are not available.¹⁶*

As shown in Table 4, in Peru, the access scale is a significant predictor of the presence of a handwashing station with soap and water at or near a kitchen facility, and the presence of a handwashing station with soap and water at or near *either* the sanitation or kitchen facilities. That is to say, access predicts the proxy for behavior in households with an adequate handwashing station at one of the two locations (making the proportion of handwashers in the regression larger). It does not, however, predict the presence of a handwashing station at or

¹⁵ S. Luby et al., "Household Characteristics Associated with Handwashing with Soap in Rural Bangladesh," *American Journal of Tropical Medicine and Hygiene*, vol. 81, no. 5, November 2009, pp. 882-887, available at www.ajtmh.org/content/81/5/882.

¹⁶ It should be noted that statements are sometimes stated in the reverse to reduce the potential for respondent bias. In the data analysis stage, these statements are coded in reverse.

Table 4: Logistic Regression Results for Access/Availability Scale Using Proxy Measures of Handwashing with Soap^{a,b}

Country	Measure	Place to Wash Hands with Soap and Water Near Sanitation Facility	Place to Wash Hands with Soap and Water Near Kitchen	Place to Wash Hands with Soap and Water Near Sanitation Facility OR Near Kitchen	Place to Wash Hands with Soap and Water Near Sanitation Facility AND Kitchen
Peru (n=3,411)	Percentage of handwashers	29.0%	43.4%	50.1%	22.3%
	Access/availability scale	1.24	1.35 ^c	1.44 ^c	1.18
	Significance (p-value)	0.093	0.008	<0.001	0.220
Senegal (n=1,770)	Percentage of handwashers	7.2%	31.4%	33.1%	5.4%
	Access/availability scale	0.84	2.09 ^c	2.04 ^c	0.78
	Significance (p-value)	0.315	<0.001	<0.001	0.202

^aLogistic regression results report the odds ratios (OR) indicating the likelihood of outcome/behavior for each unit increase in the beliefs score.

^bRegressions control for caregiver education and household wealth measured using an assets index (Peru).

^cRepresents significance at the 5 percent level.

near the sanitation facility only. Mothers and caretakers who scored higher on the access scale were more likely to have a place to wash their hands with soap at or near a kitchen facility (OR=1.35), and more likely to have a place to wash their hands with soap at or near either the toilet or kitchen facility (OR=1.44).

Evidence from Senegal suggests that access, as defined by the above-mentioned scale, is associated with the presence of a handwashing station with soap and water at or near a kitchen facility, but not at or near a toilet facility. In particular, mothers and caretakers who scored higher on the access scale were more likely to have a designated place to wash hands with soap at or near the kitchen facility (OR=2.1).

Social Norms

In Senegal, social norms were explored specifically through descriptive norms. Descriptive norms relate to what those around you can be observed doing. The following statements were used to derive a reliable scale for descriptive norms:¹⁷

- *Most families around me make sure that they have products used for washing hands with soap next to the latrine.*
- *Most families around me make sure that they have products for washing hands with soap close to their food preparation area.*
- *Most families around me make sure that they have products for washing hands with soap near where they clean their babies' bottoms after defecation.*

- *My friends make sure they have the products necessary for washing hands with soap next to the latrine.*
- *My friends make sure that they have products for washing hands with soap close to their food preparation area.*
- *My friends make sure that they have products for washing hands with soap near where they clean their babies' bottoms after defecation.*

Evidence suggests that descriptive norms are a good predictor of the presence of a designated place for washing hands with soap at or near a kitchen facility, and a designated place for washing hands with soap that serve both the toilet and kitchen facilities (or two separate stations, one for each facility), but not for a designated place for washing hands with soap solely at or near a toilet facility. Mothers and caretakers who scored higher on the descriptive norms scale were more likely to have a place to wash hands with soap at or near a designated location (OR=1.2 to OR=1.4).

In Peru, social norms were not explored in the study and as such, no scale was tested for this determinant.

Knowledge

The project hypothesized that knowledge is necessary for behavior change, though not sufficient, which is why knowledge is only one of several possible determinants in the FOAM framework.

¹⁷ The descriptive norms construct generated a Cronbach's alpha of 0.93.

In Peru, knowledge was simply defined by knowledge of the best way to wash one's hands. If the respondent answered with soap and water, then it was assumed that the respondent possessed the correct knowledge in this area. Mothers and caretakers who responded correctly to this question were more likely to have a place to wash hands with soap at a designated location (OR=1.4).¹⁸

In Senegal, knowledge was not explored in the study and, as such, no scale was tested for this determinant.

Threat

The perceived threat from not washing hands with soap was explored in Senegal only. The following statements were used to derive a reliable scale for threat:¹⁹

- *In this household, children are not at risk for diarrhea.*
- *Children are more apt to get diarrhea than adults if they do not wash their hands with soap.*
- *Children are more apt to get respiratory infections than adults if they do not wash their hands with soap.*
- *Children can die from diarrhea.*
- *Children can die from pneumonia.*
- *Children who always have diarrhea will not grow properly.*

Interestingly, this determinant acted in a reverse fashion to what was expected. Mothers and caretakers scoring higher on the threat scale were actually less likely to have a place to wash hands with soap at any designated location (OR=0.34 to OR=0.48). Because the segmentation analysis is about association and not causality, one possible interpretation of this finding is that mothers actually feel at risk for not washing their hands with soap. Another possibility is that respondents did not fully understand statements that were stated in reverse; as such, they would have a tendency to agree with all the statements systematically (to please the enumerator, so to speak), which would imply that they are not responding favorably to the general idea presented in the scale.

Soap Attributes, Locus of Control, and Intention

In Senegal, soap attributes, locus of control (beliefs about whether one controls one's own destiny or not), and intention were also explored through the "doer/non-doer" study and scales were successfully developed to approximate each of these determinants in a reliable manner. However, analysis did not uncover any statistical association with handwashing with soap based on the proxy measures used.

Habit

Although habit is not identified as a behavioral determinant in FOAM, the project decided to explore the role of habit in handwashing with soap, based on a literature review conducted in 2009 and 2010. To this end, the project adapted a Self Reported Habit Index developed by Verplanken and Wood²⁰ to handwashing with soap and introduced it in several surveys, including the Senegal "doer/non-doer" study:

- *You feel uncomfortable when you don't wash your hands with soap.*
- *You have been washing your hands with soap for a long time.*
- *You find it difficult to stop washing your hands with soap.*
- *Seeing soap when coming out of the toilet makes you want to wash your hands.*
- *Your parents taught you to wash your hands with soap.*
- *It is normal to wash your hands with soap after going to the toilet.*
- *Seeing dirt on your hands makes you automatically want to wash your hands.*

Evidence from this study suggests that an increase in this scale²¹ (see Table 2) is associated with an increase in the likelihood of the presence of a handwashing station with soap and water at or near a kitchen facility in Senegal (OR=2.5).

In Peru, the role of habit was not explored in the study and as such, no scale was tested.

¹⁸ K. Delisio, Op. cit.

¹⁹ The threats construct in Senegal was found to be both reliable and internally consistent, with a Cronbach's alpha of 0.77.

²⁰ B. Verplanken and W. Wood, "Reflections on Past Behavior: A Self-Report Index of Habit Strength," *Journal of Applied Social Psychology*, vol. 33, no. 6, 2003, pp. 1313–1330.

²¹ It should be noted that only seven of the twelve original statements developed by Verplanken and Wood were retained to measure the scale. These are presented in Table 2.

WHAT ELSE DO WE NEED TO KNOW?

An underlying assumption is that different proxy measures used in the described analyses represent different critical times for washing hands with soap.

For example, the presence of a handwashing station with soap and water near the kitchen is associated with handwashing with soap before food handling and the presence of a station next to a sanitation facility is associated with handwashing with soap after defecation or after coming in contact with feces.

If that is indeed the case, a key takeaway from this learning note is that depending on critical time or juncture for washing hands with soap, different behavioral determinants will likely have an influence. This would underscore the importance for program managers to clearly define what behaviors they wish to improve and to ensure their formative research explores determinants for those specific practices.

It should be kept in mind that an important condition of this Learning Note

is that the segmentation analysis identifies what is statistically correlated but does not attribute any causality. For example, it was noted that access is associated with handwashing with soap. However, from this analysis, we cannot determine whether access led to the practice or if those mothers who intended to handwashing with soap in the first place set up a handwashing with soap station.

Due to limitations in questionnaire length, the project was not able to explore all determinants from FOAM in each country. Moreover, as stated earlier, not all attempts to measure behavioral determinants of handwashing with soap were successful. This represents an area for further investigation, whether through a similar approach as that outlined above through other approaches such as qualitative assessments.

— **By Jacqueline Devine, Jonathan Karver, Yolande Coombes, Claire Chase, and Orlando Hernandez**

Related reading

Scaling Up Handwashing Behavior: Findings from the Impact Evaluation Baseline Survey in Peru, www.wsp.org/wsp/sites/wsp.org/files/publications/WSP_PeruBaselineStudy_HWWS.pdf

Scaling Up Handwashing Behavior: Findings from the Impact Evaluation Baseline Survey in Senegal, <http://www.wsp.org/wsp/sites/wsp.org/files/publications/WSP-Senegal-Baseline-HWWS.pdf>

Acknowledgements

The authors wish to thank Bertha Briceno, WSP Senior Monitoring & Evaluation Specialist, for her thoughtful review.

About the project

The Global Scaling Up Handwashing Project, managed by the Water and Sanitation Program (WSP), with financial support from the Bill & Melinda Gates Foundation, is learning how to apply innovative promotional approaches to behavior change to generate widespread and sustained improvements in handwashing with soap at scale. For more information, please visit www.wsp.org/scalinguphandwashing.

The Water and Sanitation Program (WSP) is a multi-donor partnership created in 1978 and administered by the World Bank to support poor people in obtaining affordable, safe, and sustainable access to water and sanitation services. WSP's donors include Australia, Austria, Canada, Denmark, Finland, France, the Bill & Melinda Gates Foundation, Ireland, Luxembourg, Netherlands, Norway, Sweden, Switzerland, United Kingdom, United States, and the World Bank.